Abstract
Background: Postprandial hyperlipaemia is an independent risk factor for atherosclerosis. Objectives: To compare postprandial lipaemia and fasting adhesion molecules levels in healthy young premenopausal (PrW) and postmenopausal (PoW) Spanish women. Subjects and methods: Twenty healthy PrW and 18 healthy PoW participated in a postprandial 7-hour intervention study. All participants were given a fat-rich standard meal (11.8% saturated, 39.7% monounsaturated, and 6.6% polyunsaturated) after a 12 h fast. Blood samples were taken at baseline and at 60, 120, 240, 360 and 420 min after eating. Triacylglycerols (TAG), total cholesterol (Chol), soluble intercellular adhesion molecule-1 (sICAM-1) and soluble vascular adhesion molecule-1 (sVCAM-1) were determined in fasting serum samples and TAG and total Chol postprandial levels were measured. Results: Anthropometric data, serum lipid and sICAM-1 presented significant higher values in PoW compared to PrW, but sVCAM-1 did not significantly differ between groups. Postprandial TAG and Chol concentrations in PoW were significantly higher than in PrW (p < 0.0001). There was a significant time influence (p < 0.0001) in TAG in PrW and PoW, while time to peak and peak concentration were significantly higher in PoW than PrW. Chol concentrations showed a significant reduction after 1 h, to reach values similar to baseline after 6 h in PrW but not in PoW. Conclusions: Lipid postprandial response to a fat rich meal and soluble intercellular adhesion molecules concentrations indicate a higher cardiovascular risk pattern in postmenopausal compared to premenopausal women. Soluble vascular adhesion molecule levels seem to be influenced not only by age and menopause, but also other factors like usual diet.

Keywords
Premenopause, Postmenopause, Postprandial lipaemia, Adhesion molecules.